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TRANSLATION

METHOD OF CARRYING OUT
DIVISIVE OPERATIONS

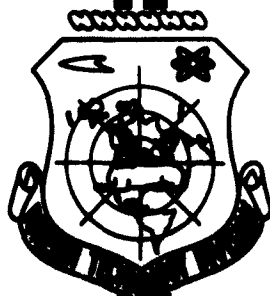
By

L. A. Golubev

FOREIGN TECHNOLOGY DIVISION

AIR FORCE SYSTEMS COMMAND

WRIGHT-PATTERSON AIR FORCE BASE
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UNEDITED ROUGH DRAFT TRANSLATION

METHOD OF CARRYING OUT DIVISIVE OPERATIONS

BY: L. A. Golubev

English Pages: 3

SOURCE: Russian Patent Nr. 145069 (698097/26),
17 Feb 1961, pp 1-2

S/19-62-0-4

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Method of Carrying Out Divisive Operations

by

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Methods of speeding up division manipulations are known.

The proposed method of executing dividing operations without restoring the balance in digital computers is distinguished by the fact that to combine the deductions with displacement of the divisor, the divisor is written in an annular sliding register, and to analyze the shifting sign of the balance is used a computing device controlled by a cadence counter.

The described method is realized by a functional arrangement, shown in drawing.

In the (n+1)-annular discharge register 1 is situated the divisor which slides over a channel to the right. In the (n+1) - discharge summator 2 is the dividend (balances). The circuit of the annular transfer is switched over from auxiliary (n+1) of discharge 3 of summator to the II-nd discharge.

In the annular register 4 are recorded the discharges of the $\frac{\text{quotient}}{\text{quotient}}$. The $\frac{\text{quotient}}{\text{quotient}}$ slides over the ring to the left. In schematic 5 the sign of the $\frac{\text{quotient}}{\text{quotient}}$ is formed

The nature of the described method rests on the following: the addition (subtraction) is realized in (n+1) - with the discharge annular summator, and right shift of the divisor - in (n+1) with the annular discharge register 1. It is indifferent how the number is situated in the annular summator, and the right shift of the divisor, i.e. in which of its discharges is situated the older discharge of the current balance.

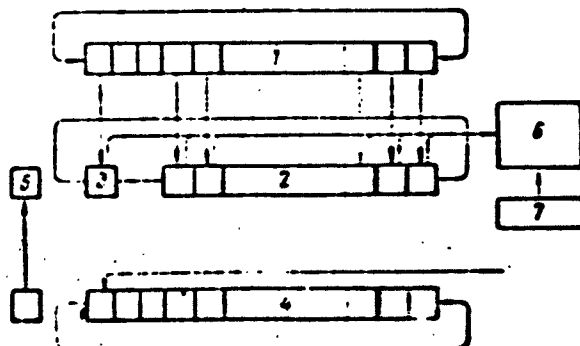
In addition, when subtracting (adding) in the discharge of the summator, preceding the older discharge of the current balance, is situated the sign of this balance. Consequently, if the discharge of the summator, preceding the older moving discharge of the current balance should be analyzed. It is then possible to control the operation of dividing analogous to the algorithm of the method of executing division without restoring the balance. For this (to analyze the moving sign of the balance) is used a computing device 6, controlled by the cadence counter 7.

The laws of dividing are ordinary: if the result sign of the preceding operation is positive, then in the quotient register is written "1" as the alternate discharge of the quotient. From the balance is deducted the divisor. If the sign of the result of preceding operation is negative, then into the quotient register is written "0" as the alternate discharge of the quotient, and the divisor is added to the balance.

In this way, the described method allows without loss in accuracy to combine addition with displacement by analyzing the moving sign discharge and it may find application when realizing division operations in digital computers.

Object of Invention.

Method of dividing without restoring the balance in digital computers, characterized by the fact that for the purpose of combining subtraction (addition) with the displacement of the divisor, the divisor is written into the annular moving register, and to analyze the moving sign of the balance is used a computing device controlled by a cadence counter.



. drawing.

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